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**TITLE:**

**TRIVERSING, ANGLE ADJUSTED**

**SURFACE CLEANING SPRAYER**

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5    **BACKGROUND OF THE INVENTION**

State of the art high pressure surface spray nozzle cleaners are hand held or fixed position or rotary sprayers.

10   **BRIEF SUMMARY OF THE INVENTION**

It is an objective of this invention to provide a liquid sprayer device which is automated to move the sprayed liquid, as it impinges the surface to be sprayed, in other than a circular pattern.

It is yet another objective of the invention to set the angle of attack,  
15   between the liquid spray & the surface to be sprayed, at an angle best suited to clean, remove or demolition the sprayed surface.

It is yet another objective of the invention to provide a device to adjust the angle of attack between the liquid & the surface to be spray.

It is yet another objective of the invention to provide a device to  
20   mobilize the sprayer unit.

It is yet another objective of the invention to provide a housing device in proximity to the sprayer unit to contain & direct the flow of air around the sprayer unit.

It is yet another objective of the invention to provide a device to move a  
25   plurality of liquid sprayers which have been adjusted to the optimum angle

5 of attack, back & forth or traversing or reciprocating parallel to the surface  
to be sprayed.

### **BRIEF DESCRIPTION OF THE DRAWINGS**

FIG. 1 is a top view of a spray header 2 with multiple liquid sprayer  
10 heads 1 and a rotating cam 3 which rotates in order to power the liquid spray  
header 2 in a traversing motion 4. The connecting rod 15 transfers the  
motion from the rotating cam 3 to the liquid spray header 2.

FIG. 2 is a side view of fig. 1 with the addition of a support device 8 to  
15 mount the liquid spray header 2 to, and a liquid spray header angle  
adjustment device 7 to alter the angle of attack between the surface to be  
sprayed 5 and the liquid sprayer 1. The liquid spray header 2 rotates on a  
pivot 6.

20 FIG. 3 is a side view of fig. 2 with the addition of a mobility device 14  
which may be moved by hand or mechanically powered or robotically  
manipulated.

5        **FIG. 4** is a top view similar to fig. 1 with the addition of multiple  
traversing headers on one machine.

**FIG. 5** is a side view similar to fig. 3 with the addition of a housing 9, a  
vacuum or blower system attachment means to move air in 10 to the housing  
10    9 and an air outlet 11 to remove the air with any moisture, liquid or debris  
which may be carried by the outlet air 11. The incoming air 10 may be  
directed so as to impinge 12 the surface 5 to be to be cleaned. The air may  
be heated or dried as needed. A seal device 13 may be used to assist in  
directing or controlling air or water flow.

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## **DEFINITIONS**

1- A liquid sprayer or spray head- device to direct liquid spray direction,  
20        pattern, concentration and/ or velocity.

2- A liquid spray header- a device to mount & supply liquid to one or  
more 1 liquid sprayers or 1 spray heads.

5        3- Device to move the 2 spray header in other than a circular pattern. A  
3 rotary cam or 3 pitmon rod may be used to move the 2 spray header.  
A preferred movement of the 2 spray header is back and forth parallel  
to the surface to be sprayed with the 1 liquid spray. A desired  
movement of the spray header is to be a 4 reciprocating motion or 4  
10        triversing motion.

4- Movement of the 2 spray header in other than a circular pattern.

5- The surface to be sprayed by the 1 liquid sprayer

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6- Pivot device on which the 1 spray head and or 2 spray header is  
pivoted in order to change the angle of attack between the sprayed  
liquid and the 5 surface to be sprayed.

20        7- Angle adjustment device used to change the angle at which the 1  
liquid sprayer and/or 2 liquid spray header sprays liquid onto the 5  
surface to be sprayed.

5        8- Support device to attach the 2 liquid spray header and/or 7 liquid  
spray header angle adjustment device and/or 14 mobility device.

9- Housing placed in proximity to the liquid spray unit in order to  
contain & direct the flow of air which is in proximity to the liquid  
10        sprayer unit.

10-        Inlet conduit to transport air into the 9 housing. The 10 inlet air  
may be sucked into the 9 housing or blown into 9 housing. The 10  
inlet air may be directed so as to 12 impinge the 5 surface to be  
15        sprayed. The 12 impingement of inlet air may assist in drying and/or  
cleaning the 5 surface to be sprayed.

11-        Outlet conduit to transport air out of the 9 housing. The 11  
outlet air may be sucked out or blown out of the 9 housing.

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12-        Device and means to impinge inlet air onto the 5 surface to be  
sprayed.

- 5        13-        Seal device used to control the quantity of air and liquid  
                 entering or exiting the 9 housing.
- 14-        Mobility device used to allow the 9 housing and/or liquid  
                 sprayer unit to be mobile.
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- 15-        Connector rod

### **DESCRIPTION OF THE PREFERED IMBODIMENT**

                 The preferred surface 5 cleaning or surface 5 conditioning pressure  
15        sprayer has one or more liquid sprayers 1 with a source of pressurized liquid.  
                 The sprayer 1 is mounted on one or more liquid spray headers 2. The header  
                 2 is moved in a traversing motion by a connecting arm 15 attached to a  
                 rotary cam 3. An angle adjustment device 7 moves the header 2 on a pivot 6  
                 in order to accomplish the most effective angle of attack for cleaning  
20        between the surface 5 to be cleaned an the pressurized liquid spray 1. The  
                 above described device may be mounted on a support 8 having a mobility  
                 means 14, a housing 9 to contain and manage liquid and air flow. Air flow,  
                 air velocity, air temperature, air dryness and air impingement may be  
                 adjusted to improve cleaning and drying of the surface to be cleaned.